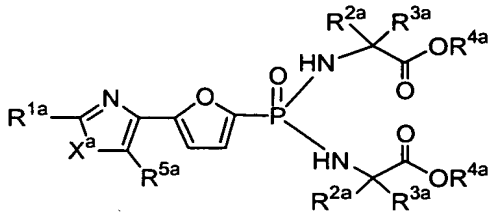
WHAT IS CLAIMED IS:

1. A method for the prevention or treatment of diabetes mellitus, for the treatment of impaired glucose tolerance and for the prevention of related diseases, comprising administering an effective amount of one or more FBPase inhibitors to a patient in need thereof.

2. A method according to claim 1, wherein the diseases related to impaired glucose tolerance are diabetes mellitus, diabetic complications or hypertension.

3. A method according to claim 1, wherein the diseases related to impaired glucose tolerance are macroangiopathy or arteriosclerosis.

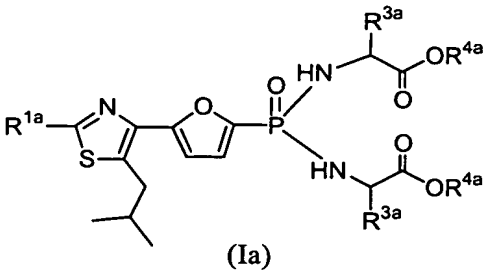
4. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (I) or a pharmacologically acceptable salt thereof:



(I)

wherein X^a represents a nitrogen atom, an oxygen atom or a sulfur atom; R^{1a} represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group, or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{2a} and R^{3a} are the same or different, and each represents a hydrogen atom or a C_{1-4} alkyl group; R^{4a} represents a C_{1-4} alkyl group; and R^{5a} represents a hydrogen atom, a C_{1-6} alkyl group or a C_{1-6} alkylthio group.

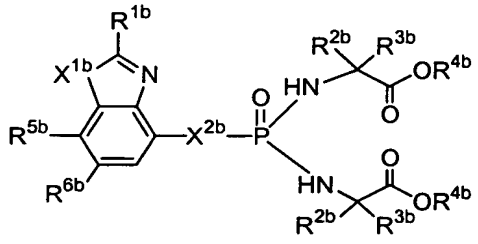
5. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (Ia) or a pharmacologically acceptable salt thereof:



(Ia)

wherein R^{1a} represents an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{3a} represents a hydrogen atom or a C_{1-6} alkyl group; and R^{4a} represents a C_{1-4} alkyl group.

6. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (II) or a pharmacologically acceptable salt thereof:

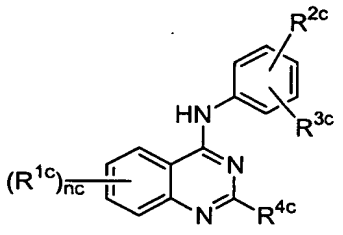


(II)

wherein X^{1b} represents an oxygen atom or a sulfur atom; X^{2b} represents a C_{1-4} alkylene group, a C_{1-4} oxyalkylene group (with the proviso that the phosphorous atom is attached to a carbon atom), or a C_{1-4} thioalkylene group (with the proviso that the phosphorous atom is attached to a carbon atom); R^{1b} represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{2b} and R^{3b} are the same or different, and each represents a hydrogen atom or a C_{1-4} alkyl group; R^{4b} represents a C_{1-4} alkyl group; and R^{5b} and R^{6b} are the same or different, and each represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group, a C_{1-6} alkoxy group, or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups).

7. A method according to claim 1, wherein the FBPase inhibitor is 2-amino-5-isobutyl-4-{2-[5-(N,N'-bis((S)-1-ethoxycarbonyl)ethyl)-phosphonamido]furanyl}thiazole, 2-amino-5-isobutyl-4-{2-[5-(O-(2-bis(N-(1-methyl-1-ethoxycarbonyl)ethyl)phosphonamido)furanyl)thiazole, 2-amino-5-propylthio-4-{2-[5-(N,N'-(1-(S)ethoxycarbonyl)ethyl)phosphonamido]-furanyl}thiazole, 2-amino-5-propylthio-4-{2-[5-(N,N'-(1-methyl-ethoxycarbonyl)ethyl)phosphonamido]furanyl}thiazole, or a pharmacologically acceptable salt thereof.

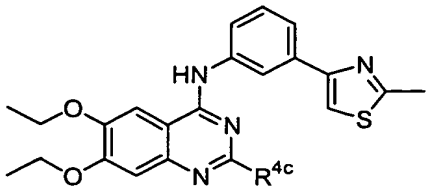
8. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (III') or a pharmacologically acceptable salt thereof:



(III')

wherein R^{1c} represents a C_{1-4} alkoxy group; R^{2c} and R^{3c} are the same or different, and each represents a thiazolyl group (said thiazolyl group may optionally be substituted with one methyl group or one methoxy group), an ethynyl group, a hydrogen atom, or a halogen atom; R^{4c} represents a C_{1-3} alkyl group (said alkyl group may optionally be substituted with one imidazolyl group), a C_{1-3} haloalkyl group, a C_{1-3} aminoalkyl group or a hydrogen atom; and n^c represents an integer of from 1 to 3.

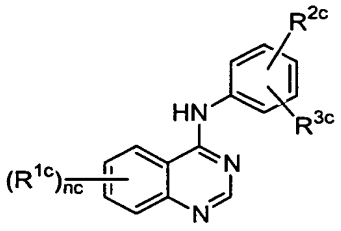
9. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (IIIa') or a pharmacologically acceptable salt thereof:



(IIIa')

wherein R^{4c} represents a C_{1-3} alkyl group (said alkyl group may optionally be substituted with one imidazolyl group), a C_{1-3} haloalkyl group, a C_{1-3} aminoalkyl group or a hydrogen atom.

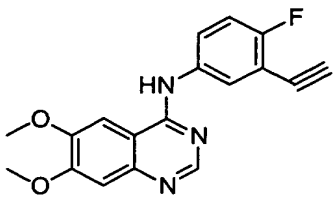
10. A method according to claim 1, wherein the FBPase inhibitor is a compound of the following formula (III) or a pharmacologically acceptable salt thereof:



(III)

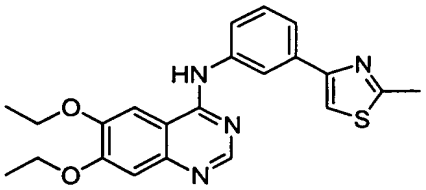
wherein R^{1c} represents a C_{1-4} alkoxy group; R^{2c} and R^{3c} are the same or different, and each represents an ethynyl group, a hydrogen atom or a halogen atom; and n^c represents an integer of from 1 to 3.

11. A method according to claim 1, wherein the FBPase inhibitor is (6,7-dimethoxy-quinazolin-4-yl)-(3-ethynyl-4-fluoro-phenyl)amine of the following formula (IIIa),



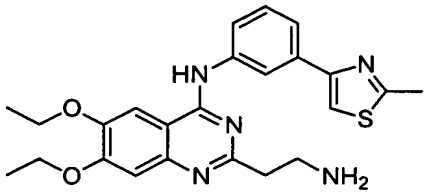
(IIIa)

(6,7-diethoxy-quinazolin-4-yl)-[3-(2-methyl-thiazol-4-yl)phenyl]amine of the following formula (IIIb),



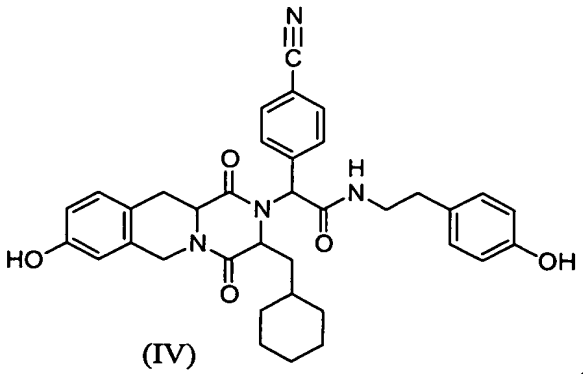
(IIIb)

or (2-aminoethyl-6,7-diethoxy-quinazolin-4-yl)-[3-(2-methyl-thiazol-4-yl)phenyl]amine of the following formula (IIIc), or a pharmacologically acceptable salt thereof



(IIIc)

12. A method according to claim 1, wherein the FBPase inhibitor is 2-(4-cyanophenyl)-2-[(3S,11aS)-3-cyclohexylmethyl-8-hydroxy-1,4-dioxo-1,2,3,4,6,11,11a-octahydropyrazino[1,2-b]isoquinolin-2-yl]-N-[2-(4-hydroxyphenyl)ethyl]acetamide of the following formula (IV) or a pharmacologically acceptable salt thereof



(IV)

13. A method according to claim 1, wherein the prevention of diabetes mellitus, comprising administering a pharmacologically effective amount of an FBPase inhibitor to a warm-blooded animal in need thereof.

14. A method according to claim 1, for the treatment of impaired glucose tolerance, comprising administering a pharmacologically effective amount of an FBPase inhibitor to a warm-blooded animal in need thereof.

15. A method according to claim 1, for the prevention of the diseases related to impaired glucose tolerance, comprising administering a pharmacologically effective amount of an FBPase inhibitor to a warm-blooded animal in need thereof.

16. A method according to claim 1, for the prevention of the diseases related to impaired glucose tolerance by improving impaired glucose tolerance, comprising administering a pharmacologically effective amount of an FBPase inhibitor to a warm-blooded animal in need thereof.

17. A method according to claim 1, for treating the diseases related to impaired glucose tolerance which are macroangiopathy or arteriosclerosis.

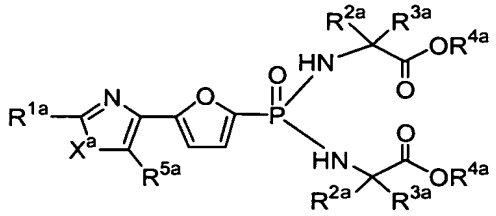
18. A method according to claim 1, wherein the FBPase inhibitor is administered to an adult human at a total dosage in the range of 0.001 mg to 2000 mg/day.

19. A method according to claim 18, wherein the dosage range is 0.01 to 200 mg/day.

20. A method according to claim 18, wherein the dosage range is 0.1 to 20 mg/day.

21. A pharmaceutical composition for the prevention or treatment of diabetes mellitus, or the treatment of impaired glucose tolerance or related diseases comprising an effective amount of FBPase inhibitor in a pharmacologically acceptable carrier.

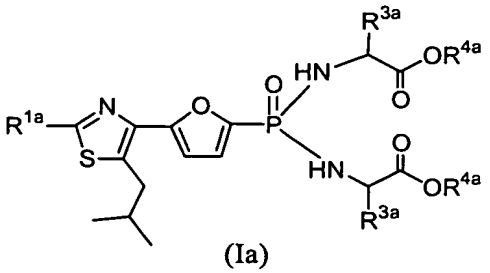
22. A pharmaceutical composition according to claim 21, wherein the FBPase inhibitor is a compound of the following formula (I) or a pharmacologically acceptable salt thereof:



(I)

wherein X^a represents a nitrogen atom, an oxygen atom or a sulfur atom; R^{1a} represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group, or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{2a} and R^{3a} are the same or different, and each represents a hydrogen atom or a C_{1-4} alkyl group; R^{4a} represents a C_{1-4} alkyl group; and R^{5a} represents a hydrogen atom, a C_{1-6} alkyl group or a C_{1-6} alkylthio group.

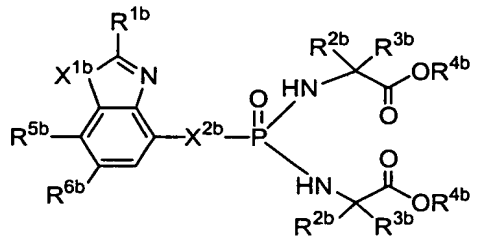
23. A pharmaceutical composition according to claim 21, wherein the FBPase inhibitor is a compound of the following formula (Ia) or a pharmacologically acceptable salt thereof:



(Ia)

wherein R^{1a} represents an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{3a} represents a hydrogen atom or a C_{1-4} alkyl group; and R^{4a} represents a C_{1-4} alkyl group.

24. A pharmaceutical composition according to claim 21, wherein the FBPase inhibitor is a compound of the following formula (II) or a pharmacologically acceptable salt thereof:



(II)

wherein X^{1b} represents an oxygen atom or a sulfur atom; X^{2b} represents a C_{1-4} alkylene group, a C_{1-4} oxyalkylene group (with the proviso that the phosphorous atom is attached to a carbon atom), or a C_{1-4} thioalkylene group (with the proviso that the phosphorous atom is attached to a carbon atom); R^{1b} represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups); R^{2b} and R^{3b} are the same or different, and each represents a hydrogen atom or a C_{1-4} alkyl group; R^{4b} represents a C_{1-4} alkyl group; and R^{5b} and R^{6b} are the same or different, and each represents a hydrogen atom, a halogen atom, a C_{1-6} alkyl group, a C_{1-6} alkoxy group, or an amino group (said amino group may optionally be substituted with one or two C_{1-6} alkyl groups).

25. A pharmaceutical composition according to claim 21, wherein the FBPase inhibitor is 2-amino-5-isobutyl-4-{2-[5-(N,N'-bis((S)-1-ethoxycarbonyl)ethyl)phosphonamido]furanyl}thiazole, 2-amino-5-isobutyl-4-{2-[5-(O-(2-bis(N-(1-methyl-1-ethoxycarbonyl)ethyl)-phosphonamido)furanyl)thiazole, 2-amino-5-propylthio-4-{2-[5-(N,N'-(1-(S)ethoxycarbonyl)ethyl)phosphonamido]furanyl}thiazole, 2-amino-5-propylthio-4-{2-[5-(N,N'-(1-methyl-ethoxycarbonyl)ethyl)phosphonamido]furanyl}thiazole, or a pharmacologically acceptable salt thereof.